2013

INFO 680 Introduction to Data Mining for Managers

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INFO680/MKTG680
Introduction to Data Mining for Managers

Fall 2013

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Office Hours: Wednesday 4:00 pm – 6:00 pm
Other times by appointment

Course Site: blackboard.xavier.edu

Classroom: Smith G28

Class time: Wednesday 6:00 pm – 8:30 pm

In case of emergency class cancellation an email will be sent to advise of the situation and provide further information. In addition, a posting will be made on Blackboard.

Williams College of Business Mission:
"We educate students of business, enabling them to improve organizations and society, consistent with the Jesuit tradition."

Class Text, Hardware, & Software:

«Required»

Applied Analytics Using SAS Enterprise Miner, SAS Institute, Cary, NC.
(Available in the bookstore)

«Recommended»

Introduction to Business Data Mining by Olson and Shi
ISBN-13: **978-0072959710**
ISBN-10: **0072959711**

Individual Readings to be presented in-class and on our course Blackboard site.

Data Files:
This class will employ SAS Enterprise Miner Software. The software is ondemand and resides on the SAS cloud. The software is free for your educational use for one year. We will work in-class to activate our accounts.

All Excel data files will be posted on our course Blackboard site.

Course Description:
This introductory course will familiarize students with popular data mining methods for extracting knowledge from data. Principles of data mining will be presented and discussed, but students will also acquire hands-on experience using state-of-the-art software to develop data mining solutions to real-world business problems. The course will de delivered from both a technological view and a marketing/management view. Topics and related methods discussed in the class include: data mining processes and knowledge discovery, database support to data mining, associations, classifications and prediction, clustering, recommendation systems and developing issues in data mining.

My Vision:
In the last decade we have seen an explosion in the quantity of data available to businesses. Transactional data from point-of-sale scanners are now routinely available; data from direct marketing is growing exponentially; and e-commerce and web-browsing data is everywhere. Obviously, there is going to be a strong interest in extracting value or knowledge from this data. My vision of this course is to present and discuss data mining technologies and their application to data sets in an effort to support tactical and strategic business decisions. However, the over-riding focus will be learning when and how to use the technologies.

Course Goals: Upon completion of this course, you should be able to:

- Understand popular data mining techniques, how to apply them, and when they are applicable
- Utilize a state-of-the-art commercial data mining package
- Apply popular data mining techniques to solve real-world problems

Course Policies:

- I will take attendance at every class period. This is simply for my information and will only come into play if attendance is poor. In this class, if you miss, it will be extremely hard for you to catch-up because of the "learning-by-doing" emphasis.
- Assignments are to be submitted on the due date. Late assignments will not be accepted unless prior arrangements have been made with the instructor. A score of 0 will be recorded for any assignment received beyond the due date.
- Grade tracking and averaging is the responsibility of the student. Blackboard will be kept up-to-date for your convenience.

WCB Learning Goals and Objectives
This course reinforces the following MBA program learning goals:

- Strategic Thinking and Leadership
  - Ability to demonstrate the appropriate knowledge of data mining in strategic thinking
- Ethics and Social Responsibility
  - Ability to foster an ethical climate in their roles and responsibilities in business and society
- Critical Thinking
  - Ability to clarify problems, generate and evaluate alternatives using appropriate analytical and quantitative techniques, and draw conclusions

Academic Honesty:
"All work submitted for academic evaluation must be the student's own. Certainly, the activities of other scholars will influence all students. However, the direct and unattributed use of another's efforts is prohibited as is the use of any work untruthfully submitted as one's own. The penalty for violation of this policy will be a zero for that assignment if it is a first offense. Subsequent violation will result in an **F for the course**."

Exams:
There will be three exams covering material from lectures, readings, and assignments.

In-class work:
We will be performing a number of in-class assignments using SAS Enterprise Miner. It is important that you attend class regularly to gain a solid understanding of the software.

Homework/Project:
We will have several out-of-class homework assignments and an individual project.

Class readings:
Published articles will be presented for reading, review, and in-class discussion. These articles will cover current trends and practices in "real-world" data mining.

Grade Components:

Exam 1	30%
Exam 2	30%
Final Exam	30%
Homework/Project	10%

Grade Distribution:

A	95-100%	C+	77-79%
A-	90-94%	C	73-76%
B+	87-89%	C-	70-72%
B	83-86%	F	Below 70%
B-	80-82%		

Class Schedule

(This is simply a guide and WILL be changed periodically. Check Blackboard for changes)

Class Date	Class Topics	
8/28/13	Course Introduction Data Mining in Business Introduction to Enterprise Miner (Sign-up)	
9/4/13	The Process and Knowledge Discovery Database Support for Data Mining Prepping and Assaying Data in Enterprise Miner	
9/11/13	Data Mining Techniques Overview of Models Wrap-up Data Prep in Enterprise Miner	
9/18/13	Cluster Analysis Enterprise Miner – Cluster Analysis	
9/25/13	Market Basket Analysis Enterprise Miner – Market Basket Analysis	
10/2/13	Wrap-Up Market Basket Analysis – Enterprise Miner Set-Up AAEM in Enterprise Miner	
10/9/13	**Exam 1** Continue Set-Up AAEM	
10/16/13	Decision Tree Analysis Enterprise Miner – Decision Trees	
10/23/13	Regression – Linear and Logistic Enterprise Miner – Regression	
10/30/13	Neural Networks Enterprise Miner – Neural Networks	
11/6/13	Wrap-Up Predictive Models– Enterprise Miner Enterprise Miner – Model Comparison Set-Up	
11/13/13	**Exam 2** Continue Model Comparison	
11/20/13	Guest Speaker (tentative)	
11/27/13	Enterprise Miner	
11/4/13	Enterprise Miner	
12/11/13	Enterprise Miner **Project Due**	
12/18/13	**Final Exam – Enterprise Miner Based Exam**	